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First Named Inventor

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3711

Examiner Name

Wm. Pierce

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ENCLOSURES (Check all that apply)

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Application Number: 10/604,853

Group Art Unit: 3711

Filing Date: 8/21/2003

Examiner Name: William Pierce

Inventors: Randall Addington et al.

Attorney Docket No.: 1081003

Title: Bowler's Positive Control System and Method

A Petition to make Special Under 37 CFR 102(c) has been granted in this Application and has been granted in parent application 09/130,905, filed 08/07/98

APPELLANTS' APPEAL BRIEF

I. The Real Parties In Interest are the Applicants.

II. There are no related appeals or interferences.

III. Claims 1 to 33 are pending in this case. Appeal is taken on the rejection of all of the pending claims 1 to 33, which are presented in the Appendix to this Appeal brief. Claims 1, 3, 17, 27, 29, are currently amended. Claims 2, 4-16, 18-26, 28, and 30 -33, are original.

IV. No amendments were filed subsequent to Final Rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The invention comprises matching or interlocking surfaces in the area of contact made by the interior surface of a bowling ball finger hole and finger pad cover mounted on a bowler's middle finger pad for achieving positive control when used in releasing the ball and imparting lift to the ball on its release. Page 4, paragraph 006 to page 13, paragraph 019.

Claim 1 describes a system of interlocking surfaces on bowler's finger pad cover and on a bowling ball finger hole insert, for producing a force to counteract shifting of the ball relative to the bowler's finger pad and the contact area made between the finger pad cover and the finger hole insert.

A first means for mounting an interlocking three dimensional surface on a finger pad is shown by the finger pad cover 31, Figures 3a and 3b for example and is disclosed as having a tip 33 and with a three dimensional pattern 39 on surface 35 for interlocking or mating with a matching pattern on the surface 15 of the finger hole 11.

See page 16, Paragraph 0030.

A second means for mounting an interlocking three dimensional surface in the finger hole of a bowling ball is in Figure 1 showing a bowling ball 10, in partial view, with a finger hole insert 11 when inserted into finger hole 12 and with the insert 11 shown partially in phantom. The finger hole, or finger hole insert inner surface 14, as shown includes a three dimensional surface, shown generally by numeral 15 on insert inner surface 14, and with base 16 and side walls 18a and 18b, defining a groove disposed parallel to a matching primary axis 22, extending longitudinally through the insert 11, as shown in Fig. 2. In a preferred embodiment, the three dimensional surface 15, is a groove, extending along an axis 22 extending from the annular opening 19 of the finger hole insert 11, to its bottom 21 and in a direct line with the matching primary axis 22. For the purposes of explanation, axis 22 is identified at the matching primary axis, and is related to the primary axis 37 of the finger pad cover 31, extending from the end adjacent or opposed to the finger tip in a direct line to the end opposed or adjacent to the finger joint, as shown in Figure 3b.

See pages 15-16, paragraphs 0026 -0027

The coaction of the first and second means is for producing a counter force opposed to movement of said first means relative to said second means. In inserting one or more of the bowler's middle fingers into a respective finger hole or finger hole insert, a bowler positions the finger pad cover 31 and the finger pad surface 35 relative to the interior surface 15 of the finger hole or finger hole insert 12 and creates a contact area, show for example by numeral 61 in figure 3b, between the finger pad cover 31 and its surface 35 and the interior surface 15 of the finger hole or finger hole insert 11. For explanation purposes, as stated above, that contact area is shown in phantom generally by 61 in Figs. 3b and 3c. In delivering and releasing the ball, and in lifting the ball, the bowler tries to maintain the position of the middle finger in the finger hole or the finger hole insert. However, due to the forces generated in the delivery and release of the ball, the ball may be moved relative to the bowler's finger, shifting the position of the ball and moving the contact area 61 by relative movement of the finger pad cover 31 and the interior surface 14 of the finger hole 12 or finger hole insert 11. The co-acting or cooperating or interlocking three dimensional surfaces 15 on the finger hole interior or finger hole insert interior and 35 on the finger pad cover, provide a counter force to an orthogonal force or any other force imposed at an angle to the primary axis 37 or matching primary axis 22, or at an angle to the direction of the release of the ball and acting against the relative displacement of the finger pad cover 31 and the finger hole interior surface 14

and the intended contact area 61 position of the surfaces 15 and 35.

See pages 22- 23, paragraph 0041-0043.

Claim 2 describes the first means including means defining a primary axis and said second means of claim 1 includes means defining a matching primary axis and said first and second means producing said counter force at an angle to said primary or said matching primary axis. The finger hole, or finger hole insert inner surface 14, as shown includes a three dimensional surface. shown generally by numeral 15 on insert inner surface 14, and with base 16 and side walls 18a and 18b, defining a groove disposed parallel to a matching primary axis 22, extending longitudinally through the insert 11, as shown in Fig. 2. In a preferred embodiment, the three dimensional surface 15, is a groove, extending along an axis 22 extending from the annular opening 19 of the finger hole insert 11, to its bottom 21 and in a direct line with the matching primary axis 22. For the purposes of explanation, axis 22 is identified at the matching primary axis, and is related to the primary axis 37 of the finger pad cover 31, extending from the end adjacent or opposed to the finger tip in a direct line to the end opposed or adjacent to the finger joint, as shown in Figure 3b.

See pages 15, paragraph 0027, lines 1-17.

Claim 3 recites said first and second means includes means to produce said counter force at an orthogonal angle to said primary or said matching primary axis. The co-acting or cooperating or interlocking three dimensional surfaces 15 on the finger hole interior or finger hole insert interior and 35 on the finger pad cover, provide a counter force to an orthogonal force or any other force imposed at an angle to the primary axis 37 or matching primary axis 22, or at an angle to the direction of the release of the ball and acting against the relative displacement of the finger pad cover 31 and the finger hole interior surface 14 and the intended contact area 61 position of the surfaces 15 and 35.

The co-acting or cooperating or interlocking three dimensional surfaces 15 on the finger hole interior or finger hole insert interior and 35 on the finger pad cover, provide a counter force to an orthogonal force or any other force imposed at an angle to the primary axis 37 or matching primary axis 22, or at an angle to the direction of the release of the ball and acting against the relative

displacement of the finger pad cover 31 and the finger hole interior surface 14 and the intended contact area 61 position of the surfaces 15 and 35.

See page 22-23, paragraph 0042,.

Claim 4 recites means for limiting the depth of insertion of said first means into said finger hole. In a preferred embodiment, as shown in Figure 3c, a stop 20 may be placed at a point along the length of the three dimensional surface 15, to limit the depth of the interlocking three dimensional surface 39 on the finger pad cover, for example as disclosed in a preferred embodiment in Figure 3a, 3c.

See page 15-16, paragraphs 0028-0029; page 19, paragraph 0037.

Claim 5 recites the said first means includes means for covering the finger tip and for providing a substantially inelastic contact area between said finger tip and said finger hole. The tip 33 of the finger pad cover 31 places a hard non deforming inelastic surface between the bowler's finger tip and the bowling ball, transferring the kinetic energy from the bowler's acceleration of the middle fingers in lifting the ball at its release, into the rotation of the ball and its velocity, without an substantial loss of force and the acceleration placed on the ball.

See page 21-22, paragraphs 0039-0040.

Claim 6 recites means forming an elongated stud and said second means includes means for forming a groove for interlocking with said stud. The finger pad cover 31 is shown generally in Fig. 3a and 3b, as having a tip 33, a contact surface shown generally by 35, a primary axis 37, and a three dimensional surface shown in a preferred embodiment with a protrusion shown as a stud 39. In the preferred embodiment disclosed in Fig. 3a and 3b, the three dimensional surface 39 is a stud which fits into, or interlocks with, a matching three dimensional groove surface 15 of the finger hole insert 11, as shown in Fig. 3c. Page 7, lines 1-7. The size or length of the stud 39 may be varied according to the disclosed inventive principles and without departing from the disclosed invention, as shown by the longer stud 39a shown in phantom. When the system of the finger pad and the finger hole insert is place in contact, a contact area is formed, for example as may be shown by contact area 61 in Figures 3b and 3c.

See description claim 1; see page 16, paragraph 0030.

Claim 7 recites first means includes means for forming at least one hemisphere protrusion and said

second means includes means for forming a hemisphere indentation for interlocking with said hemisphere protrusion. In Figures 4a, b, and c, the three dimensional surface 15 comprises one or more indentations 49a and 49b, which are shown as hemispherical, with matching pattern shown as protrusions 49a' and 49b' on the surface 35 of the finger pad cover, as shown in Figures 4a and 4b. Figure 5b shows the three dimensional surface 15 having one or more indentations 51a and 51b, which are elongated in the direction of the matching primary axis 22 and with an interlocking pattern 51 on surface 35 as shown by numerals 51a' and 51b' in Figures 5a and 5b. As would be known and understood by those skilled in the art, the three dimensional surface 15 on the finger hole insert and the matching or co-acting or interlocking surface 35 on the finger pad cover 31, may be any of the three dimensional patterns or any combination of the disclosed three dimensional patterns, or any other patterns for interlocking or mating or co-acting.

See pages 17-18, paragraph 0033.

Claim 8 recites a bowlers finger pad cover and bowling ball finger hole or finger hole insert with matching three dimensional surfaces for aligning the finger pad cover with the finger hole or finger hole insert, comprising,

- a. a finger pad cover having a primary axis and including a three dimensional surface with an interlocking pattern;
- b. a finger hole or finger hole insert, having a matching primary axis, corresponding to said primary axis, including a three dimensional surface with a interlocking pattern matching said finger pad cover three dimensional surface.

See the description of the invention given for claim 1, above.

Claim 9 recites the bowler's finger pad cover and bowling ball finger hole or finger hole insert, of claim 8, wherein, the interlocking patterns arranged substantially in the direction of said primary axis and the matching primary axis.

See description for claim 3, above.

Claim 10 recites the finger hole or finger hole insert, and said finger pad cover, are inelastic materials.

See description for claim 5, above.

Claim 11 recites the finger pad cover three dimensional surface is a stud extending substantially in the direction of said primary axis and said finger hole or finger hole insert three dimensional surface is a groove. The finger hole, or finger hole insert inner surface 14, as shown includes a three dimensional surface, shown generally by numeral 15 on insert inner surface 14, and with base 16 and side walls 18a and 18b, defining a groove disposed parallel to a matching primary axis 22, extending longitudinally through the insert 11, as shown in Fig. 2. As described for a preferred embodiment, the three dimensional surface 15, is a groove, extending along an axis 22 extending from the annular opening 19 of the finger hole insert 11, to its bottom 21 and in a direct line with the matching primary axis 22. For the purposes of explanation, axis 22 is identified at the matching primary axis, and is related to the primary axis 37 of the finger pad cover 31, extending from the end adjacent or opposed to the finger tip in a direct line to the end opposed or adjacent to the finger joint, as shown in Figure 3b.

See page 16-17, paragraphs 0029-0030

Claim 12 recites the finger pad cover three dimensional surface is at least one hemisphere protrusion and said finger hole or finger hole insert three dimensional surface is a hemisphere indentation.

See description for claim 7.

13. The bowler's finger pad cover and bowling ball finger hole or finger hole insert, of claim 8, wherein said finger pad cover three dimensional surface is a plurality of studs disposed on opposed sides of said primary axis and said finger hole or finger hole insert three dimensional surface is a plurality of grooves. The three dimensional surface 15 comprises one or more indentations 49a and 49b, which are shown as hemispherical, with matching pattern shown as protrusions 49a' and 49b' on the surface 35 of the finger pad cover, as shown in Figures -19, 21, -4a and 4b. Figure 5b shows the three dimensional surface 15 having one or more indentations 51a and 51b, which are elongated in the direction of the matching primary axis 22 and with an interlocking pattern 51 on surface 35 as shown by numerals 51a' and 51b' in Figures 5a and 5b. As would be known and understood by

those skilled in the art, the three dimensional surface 15 on the finger hole insert and the matching or co-acting or interlocking surface 35 on the finger pad cover 31, may be any of the three dimensional patterns or any combination of the disclosed three dimensional patterns, or any other patterns for interlocking or mating or co-acting.

See page 17-18, paragraph 0033.

Claim 14 recites a system for controlling the alignment of a bowler's middle finger with a bowling ball, when lifting the ball at its release, comprising,

- a. first means for interlocking a finger hole of a bowling ball with a bowler's finger;
- b. said first means including second means for mounting in a finger hole of a bowling ball and third means for mounting on the finger pad of a bowler's finger; and
- c. said first means for interlocking for holding said bowler's finger pad in alignment with said bowling ball.

See the description for Claim 1 above.

Claim 15 recites first means for interlocking includes means for defining a longitudinal axis and means for developing a counter force to a force intersecting with said longitudinal axis.

See the description for claim 2 above.

Claim 16 recites means for interlocking includes means for separation of said second means and said third means.

As would be understood by those skilled in the art, the interlocking surface may be in a finger hole insert or on the wall of the ball's finger hole, without departing from the principles of the invention. By primary axis and matching primary axis is meant an axis substantially aligned with the direction of the bowling ball at its release. However, as would be known to those skilled in the art, the interlocking three dimensional surfaces may be aligned at an angle with these axes to the extent the smooth separation of the ball from the finger at its release is not substantially impeded.

Page 10-11, paragraph 0015..

The material of the co-acting or interlocking or matching surfaces should be inelastic or stiff and resistant to deformation, on the order of a stainless steel or aluminum and may be made of any suitable plastic material which resists deformation when subject to the forces produced by the delivery and release and lifting of the bowling ball, to provide for a stable relative position of the finger pad cover relative to the contact area and its position made with the finger hole or finger hole insert. The three dimensional surfaces 15 and 35, can be finished with a smooth surface to allow the bowler to smoothly and easily release the ball without undue friction.

Pages 20-21, paragraph 0039.

Claim 17 recites means for protecting the tip of said bowler's finger from the force of the bowling ball at its release and for transferring substantially all of the accelerating force for said bowler's finger tip to said bowling ball. The tip 33 of the finger pad cover 31 places a hard non deforming inelastic surface between the bowler's finger tip and the bowling ball, transferring the kinetic energy from the bowler's acceleration of the middle fingers in lifting the ball at its release, into the rotation of the ball and its velocity, without an substantial loss of force and the acceleration placed on the ball.

Page 23, paragraph 0043.

Claim 18 recites the first means includes a means for forming a groove in said second means and means for forming a stud in said third means.

See description for Claim 6

Claim 19 recites the first means includes a means forming a hemisphere indentation in said second means and means forming a hemisphere protrusion in said third means.

See description for claim 7.

Claim 20 recites the first means includes a means forming a plurality of grooves in said second means and means for forming a plurality of studs in said third means.

See description for claim 13.

Claim 21 recites a method for interlocking sets of surfaces on a bowler's finger pad cover and on the surface of a bowling ball finger hole or finger hole insert for producing a force to counteract shifting of the ball relative to the bowler's finger pad and the contact area made between the finger pad cover and the finger hole or finger hole insert interior surface, comprising the steps of,

- a. arranging interlocking three dimensional surfaces on a finger pad cover and on a bowling ball insert, to develop a force counter to shifting of the relative position of said finger pad cover and said bowling ball insert or the contact area made between the finger pad cover and the finger hole insert;
- b. placing said interlocking three dimensional surface on a finger pad in mating relationship with said interlocking three dimensional surface on the interior surface of a bowling ball finger hole or finger hole insert.

The operation of the invention is described as follows. In inserting n one or more of the bowler's middle fingers into a respective finger hole or finger hole insert, a bowler positions the finger pad cover 31 and the finger pad surface 35 relative to the interior surface 15 of the finger hole or finger hole insert 12 and creates a contact area, show for example by numeral 61 in figure 3b, between the finger pad cover 31 and its surface 35 and the interior surface 15 of the finger hole or finger hole insert 11. For explanation purposes, as stated above, that contact area is shown in phantom generally by 61 in Figs. 3b and 3c. In delivering and releasing the ball, and in lifting the ball, the bowler tries to maintain the position of the middle finger in the finger hole or the finger hole insert. However, due to the forces generated in the delivery and release of the ball, the ball may be moved relative to the bowler's finger, shifting the position of the ball and moving the contact area 61 by relative movement of the finger pad cover 31 and the interior surface 14 of the finger hole 12 or finger hole insert 11

See description for claim 1. Page 22-23, paragraphs 0041-0042.

Claim 22 recites using said interlocking sets of surfaces to develop a force counter to a force for shifting the said contact area made between the finger pad cover and the finger hole insert or relative position of said finger pad cover and the finger hole insert.

Where, in a preferred embodiment for example, a counter force is established by mating surfaces on the finger pad cover and the finger hole interior surface that opposes relative displacement in the direction of the matching primary axis and primary axis or in the direction of the release of the ball from the finger pad cover, the bowler's delivery can be adjusted for any loss in kinetic energy caused by overcoming this counter force opposing release of the ball.

Page 23-24, paragraph 0042.

Claim 23 recites the step of limiting the depth of insertion of said finger pad cover into said finger hole insert.

See description for Claim 4.

Claim 24 recites a system for controlling the alignment of a bowler's middle finger with a bowling ball, when lifting the ball at its release, a first means for interlocking a finger hole of a bowling ball with a bowler's finger and for aligning the bowler's finger with said bowling ball.

See description for claim 1 and 8.

Claim 25 recites the first means includes means for defining a longitudinal axis and means for developing a counter force to a force intersecting with said longitudinal axis.

See description for claim 15.

Claim 26 recites the first means includes means for separation of said bowler's finger and said finger hole.

See description for claim 16.

Claim 27 recites means for protecting the tip of said bowler's finger from the force of the bowling ball at its release and for transferring substantially all of the accelerating force for said bowler's finger tip to said bowling ball.

See description for claim 17.

Claim 28 recites means for developing a cooperating force between said bowler's finger and said finger hole, for countering a force directed against said alignment.

The purpose of the invention is to provide these interlocking or mating or co-acting substantially inelastic surfaces to develop a force to counteract or oppose shifting or displacing the placement and alignment of the contact area between the finger pad cover and the finger hole insert interior surface, under the forces developed when delivering and releasing the ball and directed against that alignment.

See description for claim 1. Page 4-5, paragraph 006.

The co-acting or cooperating or interlocking three dimensional surfaces 15 on the finger hole interior or finger hole insert interior and 35 on the finger pad cover, provide a counter force to an orthogonal force or any other force imposed at an angle to the primary axis 37 or matching primary axis 22, or at an angle to the direction of the release of the ball and acting against the relative displacement of the finger pad cover 31 and the finger hole interior surface 14 and the intended contact area 61 position of the surfaces 15 and 35.

Page 23-24, paragraph 0042.

Claim 29 recites a system of interacting surfaces for controlling the alignment of a bowler's finger with a bowling ball, comprising,

- a. first means for insertion into in a bowling ball finger hole;
- b. second means for mounting on a finger pad and for forming a contact area with said first means when said second means is inserted in said first means;
- c. said first and second means including at least one means on at least one of said first or second means for producing a frictional force opposing the displacement of said first means or said second means, from said contact area.

See description for, claim 1.

Claim 30. Original. The system of claim 29, including at least one means on at least one of said

first or second means for deforming and in response to a force from the other of said first or second means.

At least one means on at least one of these first or second means for deforming in response to a force from the other of said first or second means.

In the inventive system as shown and described in a preferred embodiment, the surfaces 75 or 95 may be elastic and deformable under the force of the bowling ball at its release. The surface of the finger hole insert 11 or the surface of the finger pad 31 may be made with protrusions which are elastic and serve to increase the coefficient of friction in the inventive system of the finger pad and the finger hole insert, as shown and described herein.

Page 9, paragraph 0013, lines 23 -25. Page 26, paragraph 0046.

Claim 31 recites the said first or second means is means forming an adhesive layer.

The inventive principles may be as disclosed in Figure 6a, b, and c, including a surface 75 on the interior 77, of the finger hole insert 11, and a cooperating surface 95 on the finger pad cover 31 and wherein at least one of said surfaces, surface 75 or surface 95, is a smooth surface, producing a frictional force opposed to displacement of the finger pad cover 31 from the contact area 61, and for example as shown in Figure 3b and 3c. In a preferred embodiment, for example, the surface may be on the surface of the finger hole insert 12. However, surfaces may be used on the surface of the finger hole insert 12 and on the finger pad 31 to increase friction. In a preferred embodiment, the surface may be an adhesive layer.

Page 24, paragraph 0045, lines 9-24.

Claim 32 recites the first or second means forms a two dimensional surface for forming a contact with the other of said first means or second means and including means for making said first or second means inelastic to the force of the bowling ball at its release.

See description, for claims 5, 15 ,17

Claim 33 recites the first or second means forms a two dimensional surface for forming a frictional contact with the other of said first means or second means and including means for making said first or second means elastic to the force of the bowling ball at its release.

See description for claim 30.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether rejected claims 2, 3, 15, and 20-33, are non statutory under 35 U.S.C. 101.
2. Whether rejected claims 2, 3, 15 and 20-33, are indefinite under 35 U.S.C. 2nd Paragraph.
3. Whether rejected claims 1-4, 6-16, 18, 19, and 21-33, are anticipated by Calentine, under 35 U.S.C. 102(b).
4. Whether rejected claims 5, 17, and 20, are obvious in view of, and over, Calentine..

VII. ARGUMENT

1. Claims 2, 3, 15, and 20-33, meet all statutory requirements of 35 U.S.C. 101.

Claim 2, dependent from claim 1, recites,

[Claim1 Beginning] A system of interlocking surfaces on bowler's finger pad cover and on a bowling ball finger hole insert for producing a force to counteract shifting of the ball relative to the bowler's finger pad and the contact area made between the finger pad cover and the finger hole insert, comprising,

- a. first means for mounting an interlocking three dimensional surface on a finger pad;
- b. second means for mounting an interlocking three dimensional surface on the finger hole of a

bowling ball;

c. said first and second means for co-acting to produce a counter force opposed to movement of said first means relative to said second means [; End of claim 1];

[Recitation of claim 2] d. said first means includes means defining a primary axis and said second means includes means defining a matching primary axis and said first and second means producing said counter force at an angle to said primary or said matching primary, axis.

(Brackets [] Added] to show parent and dependent claims)

Applicants's position is the system of claim 1 is a product of human ingenuity and not a product found in nature. Applicants refers to, and asks the Board to take judicial notice of, the Manual of Patent Examining Procedure, 2105 Patentable Subject Matter - Living Subject Matter [R-1] , and its discussion of Diamond v. Chakrabarty, 447 U.S. 303, 206 USPQ 193 (1980).

Examiner's argument relies on Chakrabaty , and the above section of the MPEP is on that point of examiner's rejection. As understood, and as believed explained in the MPEP, the Office will decide the questions as to patentable subject matter under 35 U.S.C. 101 on a case-by-case basis following the tests set forth in *Chakrabarty*, e.g., that "a nonnaturally occurring manufacture or composition of matter" is patentable.. The *Chakrabarty* tests are understood to be,

(A) "The laws of nature, physical phenomena and abstract ideas" are not patentable subject matter.

(B) A "nonnaturally occurring manufacture or composition of matter - a product of human ingenuity -having a distinctive name, character, [and] use" is patentable subject matter.

© "[A] new mineral discovered in the earth or a new plant found in the wild is not patentable subject matter. Likewise, Einstein could not patent his celebrated $E=mc^2$; nor could Newton have patented the law of gravity. Such discoveries are 'manifestations of... nature, free to all men and reserved exclusively to none.'"

(D) "[T]he production of articles for use from raw materials prepared by giving to these materials *new forms, qualities, properties, or combinations whether by hand labor or by machinery*" [emphasis added] is a "manufacture" under 35 U.S.C.

Id. MPEP 2105.

Examiner's grounds for rejection are,

Claim 2,, 3, 15, and 20-33 claims the combination of a counter force or a frictional force; and,

[F]rictional and inertia forces being claimed in combination here are considered to be laws of nature and physical phenomena and not patentatble. . . .claim 1, for example,, most broadly reads as a 'system,' . . . for producing a force.

Office action, page 2, limes 9-14.

Claim 3, dependent from claim 2, recites,

wherein said first and second means includes means to produce said counter force at an orthogonal angle to said primary or said matching primary axis.

In Claims 2 and 3, Applicants' means plus function recitations are clear in describing the disclosed structure or equivalents for the recited functions. The recited "forces," are physical elements of, and recited relative to the means of the the human engineered system, produced in the functioning of the recited human devised means and are part of the means plus function recitation of a human devised machine, under 35 U.S.C. 112, 6th Paragraph.

Claim 15, dependent from claim 14, recites,

[Begin claim 14] A system for controlling the alignment of a bowler's middle finger with a bowling ball, when lifting the ball at its release, comprising,

a. first means for interlocking a finger hole of a bowling ball with a bowler's finger;

- b. said first means including second means for mounting in a finger hole of a bowling ball and third means for mounting on the finger pad of a bowler's finger; and
 - c. said first means for interlocking for holding said bowler's finger pad in alignment with said bowling ball; [End claim 14],
[Begin claim 15] wherein,
 - d. said first means for interlocking includes means for defining a longitudinal axis and means for developing a counter force to a force intersecting with said longitudinal axis.
- (Brackets [] Added] to show parent and dependent claims)

The recitations of claim 15, the same as for claims 2 and 3, are of functions describing the interrelated operation of physical structures and the physical forces developed in the recited means plus function language. Examiner has not shown where the recited functions fail to recite the disclosed structure and equivalents, as directed by 35 U.S.C. 112, 6th paragraph, or why the recited means is a product of nature and not the human made device disclosed. Examiner's rejection is limited to conclusions or opinions unsupported by record facts. Applicant applies the grounds given for vacating examiner rejection of claims 2 and 3 to claim 15.

Examiner's argument, that,

Applicants claims are rejected under [35 U.S.C] 101 as being non statutory for claiming a system for producing a force and not for drafting the claims in means plus function language,

cannot be reconciled with the recited claim language of claims 2, 3, 15 and 20-33, where the forces are produced as an interactive and co functioning part of the disclosed physical structure recited as means or structure and producing an industrial result.

Claim 20, dependent from claim 14, (see Appendix) recites structure in means plus functions language, does not recite "forces," examiner's sole ground for a rejection under 35 U.S.C. 101.

Claims 21 to 23 (see Appendix), are method claims reciting steps for using a the disclosed

mechanical device as described in a preferred embodiment and the physical forces developed in the use of the method. The recited method is of use of a device made by human ingenuity.

Claims 24 -33 (see Appendix) recited a physical embodiment which elements interacting in responsive to the physical forces produce by each of the elements. These claims, in the same way as all of the other claims in this appeal, describe a device made by human ingenuity with coacting parts. It, as a mechanical device, is no different and is the analog of any electronic device with elemental circuits producing internal signals which produce “forces,” within the system on other element circuits and in response the other element circuits act responsively.

Examiner’s rejection under 101 is wrong when analyzed under well recognized engineering principles of force as applied to a machine part or as produced by a machine part. As would be understood by those skilled in the art, force is physical element in every machine or system, The force can appear in any form, mechanically by physical elements acting against each other or by electric or magnetic, fields. Contrary to examiner’s statement, the recited claims are no “ $e=mc^2$ or the laws of the force of gravity.

In summary, examiner has merely stated an opinion, lacking competent record fact support inadequate as a suitable record for analysis and response. Applicant believes the claims speak for themselves as proper claiming of a physical machine designed, and functioning, according to man made efforts and not as a product of nature or anything naturally occurring. Examiner must do more to meet the standard for a proper rejection by demonstrating with competent evidence why a rejection under 35 U.S.C. 101 is proper.

2. Claims 2-3, 15, and 20-33 are proper under 35 U.S.C. 112, 2nd Paragraph.

Examiner’s rejection is,

The metes and bounds of claims 2 and 3 are unclear in that it claims a force that is created during an intended use of a bowling ball; and

The rejection set forth that the claims were indefinite . . . due to the claims not pointing out and distinctly claiming the subject matter which the applicant regards as his invention as required by the second paragraph of 35 USC 112.

(Pages 2 and 3)

All of the claims, reciting means plus functions as permitted under 35 U.S.C. 112, Paragraph 6th, have not been shown by examiner to be unsupported by the structure or equivalents described in the specification.

Claim 2 dependent from claim 1 and claim 3 dependent from claim 2, are reproduced here.

1. Currently Amended. A system of interlocking surfaces on bowler's finger pad cover and on a bowling ball finger hole insert for producing a force to counteract shifting of the ball relative to the bowler's finger pad and the contact area made between the finger pad cover and the finger hole insert, comprising,
 - a. first means for mounting an interlocking three dimensional surface on a finger pad;
 - b. second means for mounting an interlocking three dimensional surface on the finger hole of a bowling ball;
 - c. said first and second means for co-acting to produce a counter force opposed to movement of said first means relative to said second means.
2. Original. The system of claim 1, wherein,
 - d. said first means includes means defining a primary axis and said second means includes means defining a matching primary axis and said first and second means producing said counter force at an angle to said primary or said matching primary, axis.
3. Currently Amended. The system of claim 2, wherein , said first and second means includes means to produce said counter force at an orthogonal angle to said primary or said matching primary axis.

Claims 2 and 3, recites the physical means as disclosed, functioning in a physically interactive way, as disclosed, to produce interacting physical forces. The recited claimed invention does not, and examiner has not explained how, the recited elements for the invention of claims 2 and 3 or any other rejected claim, “depend on how a bowling ball is delivered.” That is examiner’s opinion without record facts is incompetent as evidence and does not meet the standard of examination.

Claim 4 (see appendix), recites in means plus function language, the means for limiting the depth of insertion

No claim is read apart from or independent of the supporting disclosure. See MPEP Section 2173.03. All of the rejected claims read consistently with the specification as a defined combination of physical elements or steps of a method, as permitted under 35 U.S.C. 112, 6th Paragraph, and as shown in Section V. All of the claims stand on their own, as adequately supported by the disclosed principles for a preferred embodiment of the invention, as described in the specification, and would be understood by one skilled in the art..

Examiner’s grounds for rejection has stated no competent record facts for the claims to demonstrate the allegation they are “. . . unclear in that it [sic] claims a force that is created during an intended use of a bowling ball or that the “. . . scope will change depending on how a bowling ball is delivered ”

Claims 15 and 20-23, are shown to be adequately supported by a disclosed preferred embodiment and would be understood by those skilled in the art, in the same way as claims 1 to 4. Examiner’s rejection has not demonstrated by record facts why the claim is ambiguous. The rejection is merely a statement of opinion, which examiner ask that the Board accept. However, the Board cannot accept Examiner’s rejection without competent substantial evidence based on record facts, which examiner has not provided.

This ground of rejection should be vacated.

3. Claims 1-4, 6-16, 18-19, and 21-33, are not anticipated under 35 U.S.C. 102, by Calentine.

Claims 1-4, 6-16, 18-19, and 21-33, stand are rejected as anticipated by Calentine. Calentine is limited to a thumb piece which has frictional inserts 28, 30, cooperating with the surface of the bowling ball hole or with a frictional insert 72 in the bowling ball hole. In operation, the Calentine device operates by a sliding frictional contact of opposed surfaces presented by the inserts 28, 30 and the hole insert 72, or the wall of the bowling ball hole.

Examiner has not shown by record facts where Caletin discloses the recited elements of claims ~~1-4~~, ^{1-4 JM 10/24/05} underlined as shown below.

Calentin does not disclose the means and functional elements of claim 1, recited as,

- a. first means for mounting an interlocking three dimensional surface on a finger pad;
- b. second means for mounting an interlocking three dimensional surface on the finger hole of a bowling ball;
- c. said first and second means for co-acting to produce a counter force opposed to movement of said first means relative to said second means.

(Underlining added)

2. The system of claim 1, wherein,

- d. said first means includes means defining a primary axis and said second means includes means defining a matching primary axis and said first and second means producing said counter force at an angle to said primary or said matching primary, axis.

(Underlining added)

3. The system of claim 2, wherein , said first and second means includes means to produce said counter force at an orthogonal angle to said primary or said matching primary axis.

(Underlining added)

4. The system of claim 1, wherein,

e. said second means includes means for limiting the depth of insertion of said first means into said finger hole.

(Underlining added).

Cateline does not disclosed the elements of the claims, recited as,

6. Original. The system of claim 1, wherein,

g. said first means includes means forming an elongated stud and said second means includes means for forming a groove for interlocking with said stud.

(Underling added)

7. Original. The system of claim 1, wherein,

h. said first means includes means for forming at least one hemisphere protrusion and said second means includes means for forming a hemisphere indentation for interlocking with said hemisphere protrusion.

(Underling added)

8. Original. A bowlers finger pad cover and bowling ball finger hole or finger hole insert with matching three dimensional surfaces for aligning the finger pad cover with the finger hole or finger hole insert, comprising,

a. a finger pad cover having a primary axis and including a three dimensional surface with an interlocking pattern;

b. a finger hole or finger hole insert, having a matching primary axis, corresponding to said primary axis, including a three dimensional surface with a interlocking pattern matching said finger pad cover three dimensional surface.

(Underling added)

9. Original. The bowler's finger pad cover and bowling ball finger hole or finger hole insert, of claim 8, wherein,

c. said interlocking patterns arranged substantially in the direction of said primary axis and said matching primary axis.

(Underling added)

10. Original. The bowler's finger pad cover and bowling ball finger hole or finger hole insert, of claim 9, wherein, d. said finger hole or finger hole insert, and said finger pad cover, are inelastic materials.

(Underling added)

11. Original. The bowler's finger pad cover and bowling ball finger hole or finger hole insert, of claim 8, wherein said finger pad cover three dimensional surface is a stud extending substantially in the direction of said primary axis and said finger hole or finger hole insert three dimensional surface is a groove.

(Underling added)

12. Original. The bowler's finger pad cover and bowling ball finger hole or finger hole insert, of claim 8, wherein said finger pad cover three dimensional surface is at least one hemisphere protrusion and said finger hole or finger hole insert three dimensional surface is a hemisphere indentation.

(Underling added)

13. Original. The bowler's finger pad cover and bowling ball finger hole or finger hole insert, of claim 8, wherein said finger pad cover three dimensional surface is a plurality of studs disposed on opposed sides of said primary axis and said finger hole or finger hole insert three dimensional surface is a plurality of grooves.

(Underling added)

14. Original. A system for controlling the alignment of a bowler's middle finger with a bowling ball, when lifting the ball at its release, comprising,

- a. first means for interlocking a finger hole of a bowling ball with a bowler's finger;
- b. said first means including second means for mounting in a finger hole of a bowling ball and third

means for mounting on the finger pad of a bowler's finger; and

c. said first means for interlocking for holding said bowler's finger pad in alignment with said bowling ball.

(Underling added)

15. Original. The system of claim 14, wherein,

d. said first means for interlocking includes means for defining a longitudinal axis and means for developing a counter force to a force intersecting with said longitudinal axis.

(Underling added)

16. Original. The system of claim 15, wherein,

e. said first means for interlocking includes means for separation of said second means and said third means.

18. Original. The system of claim 14, wherein said first means includes a means for forming a groove in said second means and means for forming a stud in said third means.

(Underling added)

19. Original. The system of claim 14, wherein said first means includes a means forming a hemisphere indentation in said second means and means forming a hemisphere protrusion ins said third means.

(Underling added)

Calentin does not disclose the method steps for recitations of claim 21 recited as,

a. arranging interlocking three dimensional surfaces on a finger pad cover and on a bowling ball insert, to develop a force counter to shifting of the relative position of said finger pad cover and said bowling ball insert or the contact area made between the finger pad cover and the finger hole insert;

b. placing said interlocking three dimensional surface on a finger pad in mating relationship with said interlocking three dimensional surface on the interior surface of a bowling ball finger hole or finger hole insert.

(Underlining added)

Cateline does not disclose the recited elements of method claims 22 to 23, dependent from claim 21 or the system claims 24 to 33 (see Appendix).

A rejection under 35 U.S.C. 102 requires the cited reference teach every element of the claim. See MPEP Section 2131 Anticipation.

The final rejection does not address any or all of the separated recited elements in any of the rejected claims, for example as shown above. The rejection is limited to a cursory explanation of what examiner reads in Calentine but does not include any competent evidentiary facts connecting the disclosure of Calentine, with the recited elements of the claimed invention.

Examiner's reliance on "inherency," is misapplied. Inherency requires that the extrinsic evidence make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient (underling added). See MPEP Section 2112.

4. Claims 5, 17, and 20 are not made unpatentable over or in view of Calentine.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP Section 2143.

Claim 5, dependent from an allowable claim 1, recites,

said first means includes means for covering the finger tip and for providing a

substantially inelastic contact area between said finger tip and said finger hole.

Claim 17, dependent from an allowable claim 14, recites,

means for protecting the tip of said bowler's finger from the force of the bowling ball at its release and for transferring substantially all of the accelerating force for said bowler's finger tip to said bowling ball.

Claim 20, dependent from an allowable claim 14, recites,

said first means includes a means forming a plurality of grooves in said second means and means for forming a plurality of studs in said third means.

The grounds for rejection fails to show to teach how Pugh may be combined with Calentine. The reason given for rejection, that it would have been obvious, is a conclusion without any support in record fact and does not explain how Pugh or Calentin, teaches or discloses any claimed combination. A teaching for combining references is essential to establishing a supportable rejection under 35 U.S.C. 103. Pugh is a finger guard to prevent injury to he finger. There is no competent record evidence showing any teaching of combining any element of Pugh with the elements of the recited claimed invention of claims 5, 17, and 20. This ground for rejection fails to meet prima facie obviousness and should be vacated.

Applicant has shown all of the record claims, as presented in the Appendix, attached, are allowable.

Submitted,

 10/26/05

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Application Number: 10/604,853

Group Art Unit: 3711

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Examiner Name: William Pierce

Inventors: Randall Addington et al.

Attorney Docket No.: 1081003

Title: Bowler's Positive Control System and Method

APPENDIX OF CLAIMS

1. A system of interlocking surfaces on bowler's finger pad cover and on a bowling ball finger hole insert for producing a force to counteract shifting of the ball relative to the bowler's finger pad and the contact area made between the finger pad cover and the finger hole insert, comprising,
 - a. first means for mounting an interlocking three dimensional surface on a finger pad;
 - b. second means for mounting an interlocking three dimensional surface on the finger hole of a bowling ball;
 - c. said first and second means for co-acting to produce a counter force opposed to movement of said first means relative to said second means.
2. The system of claim 1, wherein,
 - d. said first means includes means defining a primary axis and said second means includes means defining a matching primary axis and said first and second means producing said counter force at an angle to said primary or said matching primary, axis.
3. The system of claim 2, wherein , said first and second means includes means to produce said counter force at an orthogonal angle to said primary or said matching primary axis.
4. The system of claim 1, wherein,
 - e. said second means includes means for limiting the depth of insertion of said first means into said finger hole.
5. The system of claim 1, wherein,
 - f. said first means includes means for covering the finger tip and for providing a substantially inelastic contact area between said finger tip and said finger hole.

6. The system of claim 1, wherein,
- g. said first means includes means forming an elongated stud and said second means includes means for forming a groove for interlocking with said stud.
7. The system of claim 1, wherein,
- h. said first means includes means for forming at least one hemisphere protrusion and said second means includes means for forming a hemisphere indentation for interlocking with said hemisphere protrusion.
8. A bowlers finger pad cover and bowling ball finger hole or finger hole insert with matching three dimensional surfaces for aligning the finger pad cover with the finger hole or finger hole insert, comprising,
- a. a finger pad cover having a primary axis and including a three dimensional surface with an interlocking pattern;
- b. a finger hole or finger hole insert, having a matching primary axis, corresponding to said primary axis, including a three dimensional surface with a interlocking pattern matching said finger pad cover three dimensional surface.
9. The bowler's finger pad cover and bowling ball finger hole or finger hole insert, of claim 8, wherein,
- c. said interlocking patterns arranged substantially in the direction of said primary axis and said matching primary axis.
10. The bowler's finger pad cover and bowling ball finger hole or finger hole insert, of claim 9, wherein,
- d. said finger hole or finger hole insert, and said finger pad cover, are inelastic materials.
11. . The bowler's finger pad cover and bowling ball finger hole or finger hole insert, of claim 8, wherein said finger pad cover three dimensional surface is a stud extending substantially in the direction of said primary axis and said finger hole or finger hole insert three dimensional surface is a

groove.

12. The bowler's finger pad cover and bowling ball finger hole or finger hole insert, of claim 8, wherein said finger pad cover three dimensional surface is at least one hemisphere protrusion and said finger hole or finger hole insert three dimensional surface is a hemisphere indentation.

13. . The bowler's finger pad cover and bowling ball finger hole or finger hole insert, of claim 8, wherein said finger pad cover three dimensional surface is a plurality of studs disposed on opposed sides of said primary axis and said finger hole or finger hole insert three dimensional surface is a plurality of grooves.

14. A system for controlling the alignment of a bowler's middle finger with a bowling ball, when lifting the ball at its release, comprising,

- a. first means for interlocking a finger hole of a bowling ball with a bowler's finger;
- b. said first means including second means for mounting in a finger hole of a bowling ball and third means for mounting on the finger pad of a bowler's finger; and
- c. said first means for interlocking for holding said bowler's finger pad in alignment with said bowling ball.

15. The system of claim 14, wherein,

- d. said first means for interlocking includes means for defining a longitudinal axis and means for developing a counter force to a force intersecting with said longitudinal axis.

16. The system of claim 15, wherein,

- e. said first means for interlocking includes means for separation of said second means and said third means.

17. The system of claim 14, including,

- f. means for protecting the tip of said bowler's finger from the force of the bowling ball at its

release and for transferring substantially all of the accelerating force for said bowler[=]'s finger tip to said bowling ball.

18. The system of claim 14, wherein said first means includes a means for forming a groove in said second means and means for forming a stud in said third means.

19. The system of claim 14, wherein said first means includes a means forming a hemisphere indentation in said second means and means forming a hemisphere protrusion ins said third means.

20. The system of claim 14 wherein said first means includes a means forming a plurality of grooves in said second means and means for forming a plurality of studs in said third means.

21. A method for interlocking sets of surfaces on a bowler's finger pad cover and on the surface of a bowling ball finger hole or finger hole insert for producing a force to counteract shifting of the ball relative to the bowler's finger pad and the contact area made between the finger pad cover and the finger hole or finger hole insert interior surface, comprising the steps of,

- a. arranging interlocking three dimensional surfaces on a finger pad cover and on a bowling ball insert, to develop a force counter to shifting of the relative position of said finger pad cover and said bowling ball insert or the contact area made between the finger pad cover and the finger hole insert;
- b. placing said interlocking three dimensional surface on a finger pad in mating relationship with said interlocking three dimensional surface on the interior surface of a bowling ball finger hole or finger hole insert.

Claim 22. The method of claim 21, including the steps of,

- c. using said interlocking sets of surfaces to develop a force counter to a force for shifting the said contact area made between the finger pad cover and the finger hole insert or relative position of said finger pad cover and the finger hole insert.

Claim 23. The method of claim 21, including the step of,

limiting the depth of insertion of said finger pad cover into said finger hole insert.

Claim 24. In a system for controlling the alignment of a bowler's middle finger with a bowling ball, when lifting the ball at its release, a first means for interlocking a finger hole of a bowling ball with a bowler's finger and for aligning the bowler's finger with said bowling ball.

Claim 25. . In a system of claim 24, wherein, said first means includes means for defining a longitudinal axis and means for developing a counter force to a force intersecting with said longitudinal axis.

Claim 26. . In a system of claim 24, wherein, said first means includes means for separation of said bowler's finger and said finger hole.

Claim 27. In a system of claim 24, including means for protecting the tip of said bowler's finger from the force of the bowling ball at its release and for transferring substantially all of the accelerating force for said bowler's finger tip to said bowling ball.

Claim 28. In a system of claim 24, including means for developing a cooperating force between said bowler's finger and said finger hole, for countering a force directed against said alignment.

Claim 29. A system of interacting surfaces for controlling the alignment of a bowler's finger with a bowling ball, comprising,

- a. first means for insertion into in a bowling ball finger hole;
- b. second means for mounting on a finger pad and for forming a contact area with said first means when said second means is inserted in said first means;
- c. said first and second means including at least one means on at least one of said first or second means for producing a frictional force opposing the displacement of said first means or said second means, from said contact area.

Claim 30. The system of claim 29, ncluding at least one means on at least one of said first or second means for deforming and in response to a force from the other of said first or second means.

Claim 31. The system of claim 30 wherein, said wherein said first or second means is means forming an adhesive layer.

Claim 32. The system of claim 29, wherein said first or second means forms a two dimensional surface for forming a frictional contact with the other of said first means or second means and including means for making said first or second means inelastic to the force of the bowling ball at its release.

Claim 33. The system of claim 29, wherein said first or second means forms a two dimensional surface for forming a frictional contact with the other of said first means or second means and including means for making said first or second means elastic to the force of the bowling ball at its release.

End of Claims